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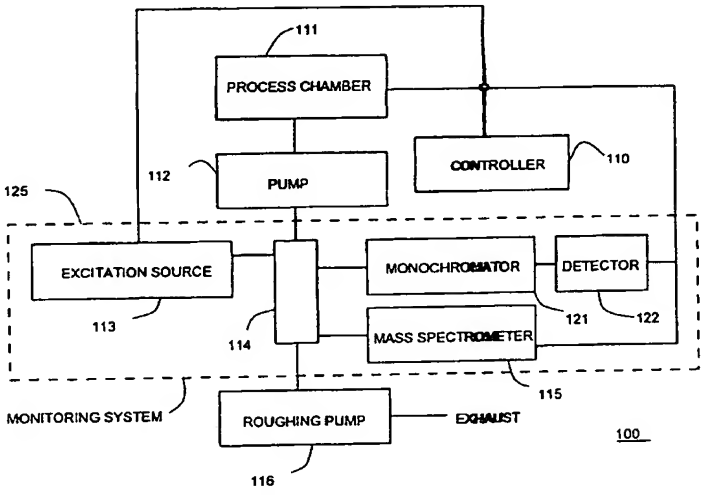
(54) Title: METHOD AND APPARATUS FOR PROCESS MONITORING AND CONTROL



(57) Abstract: A method and apparatus for real-time monitoring of a gaseous environment during a semiconductor process. The method utilizes metastable electronic energy transfer to excite and ionize the chamber gaseous effluent and correlates the fluorescence signals from the excited species and mass spectroscopy analysis of the ions generated with the process status. In addition to the ability to produce excited species that fluoresce, the method has the ability to generate molecular ions from labile compounds, reduce fragmentation and operate at higher pressures than conventional ionization methods.

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